



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 1

**Complete if Known**

Application Number	10/696,618
Filing Date	October 29, 2003
First Named Inventor	Allen A. ARADI et al.
Art Unit	Not Assigned
Examiner Name	Not Assigned; Conf. No.: 5585
Attorney Docket Number	EI-7607

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
CST		US- 2003/0097783 A1	05-29-2003	JORDAN	
		US- 3,127,351	03-31-1964	BROWN et al.	
		US- 3,442,631	05-06-1969	GLUCKSTEIN	
		US- 4,191,536	03-04-1980	NIEBYLSKI	
CST		US- 4,690,687	09-01-1987	JOHNSTON et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
CST		GB 787,374	12-04-1957	BROWN		
		GB 886,447	01-10-1962	ESSO RESEARCH & ENG CO		

Examiner  
SignatureDate  
Considered

3/06

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



Please type a plus sign (+) inside this box

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO MAY 05 2004		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/696,618
		Filing Date	October 29, 2003
		First Named Inventor	Allen A. Aradi, et al.
		Group Art Unit	3747
		Examiner Name	Not Assigned
Sheet 1 of 5	Attorney Docket Number	EI-7607	

U.S. PATENT DOCUMENTS						
Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
CDT		US 6,361,754 B1		Peter-Hoblyn et al.	3/26/2002	
		US 6,200,358 B1		Fleischer et al.	3/13/2001	
		US 6,193,767 B1		Arters et al.	2/27/2001	
		6,152,972		Shustorovich et al.	11/28/2000	
		6,056,792		Barr et al.	5/2/2000	
		6,051,040		Peter-Hoblyn	4/18/2000	
		6,023,928		Peter-Hoblyn et al.	2/15/2000	
		6,003,303		Peter-Hoblyn et al.	12/21/1999	
		5,976,475		Peter-Hoblyn et al.	11/2/1999	
		5,953,906		Gamel et al.	9/21/1999	
		5,944,858		Wallace	8/31/1999	
		5,928,392		Aradi	7/27/1999	
		5,924,280		Tarabulski	7/20/1999	
		5,919,276		Jeffrey	7/6/1999	
		5,912,190		Barr et al.	6/15/1999	
CDT		5,819,529		Peter-Hoblyn	10/13/1998	
		5,813,224		Rao et al.	9/29/1998	
		5,809,775		Tarabulski et al.	9/22/1998	
		5,809,774		Peter-Hoblyn et al.	9/22/1998	
		5,758,496		Rao et al.	6/2/1998	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sub>6</sub>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
CDT		EP	0 466 512	B1	Leeper	6/29/94		
		EP	0 507 510	A1	Hollrah, Don Paul et al	10/07/92		
		EP	0 667 387	A2	Perry, Newton A. et al	8/16/1995		
CDT		EP	0668 899	B1	Peter-Hoblyn et al	09/20/00		

Examiner Signature		Date Considered	3/06
--------------------	--	-----------------	------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
		Application Number	10/696,618		
		Filing Date	October 29, 2003		
		First Named Inventor	Allen A. Aradi, et al.		
		Group Art Unit	3747		
		Examiner Name	Not Assigned		
		Attorney Docket Number	EI-7607		
Sheet	2	of	5		

U.S. PATENT DOCUMENTS						
Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
COT		5,732,548		Peter-Hoblyn	3/31/1998	
		5,679,116		Cunningham et al.	10/21/1997	
		5,599,357		Leeper	2/4/1997	
		5,584,894		Peter-Hoblyn et al.	12/17/1996	
		5,551,957		Cunningham et al.	9/3/1996	
		5,501,714		Valentine et al.	3/26/1998	
		5,378,154		Daty et al.	12/27/1994	
		5,340,369		Koch et al.	8/23/1994	
		5,113,803		Hollran et al.	5/19/1992	
		5,034,020		Epperly et al.	7/23/1991	
		4,955,331		Hohr et al.	9/11/1990	
		4,946,609		Pruess et al.	8/7/1990	
		4,908,045		Farrar	3/13/1990	
		4,891,050		Bowers et al.	1/2/1990	
		4,804,388		Kuklin	2/14/1989	
COT		4,674,447		Davis	6/23/1987	
		4,670,020		Rao	6/2/1987	
		4,664,677		Dorer, Jr. et al.	5/12/1987	
		4,588,416		Zaweski et al.	5/13/1986	
		4,568,357		Simon	2/4/1986	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sub>6</sub>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
CO1		EP	1 368 444	A1	Openshaw et al.	12-10-2003		
CO1		WO	02/48293	A1	Roos et al.	06-20-2002		

Examiner Signature		Date Considered	3/06
-----------------------	--	--------------------	------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 3 of 5

### Complete if Known

Application Number	10/696,618
Filing Date	October 29, 2003
First Named Inventor	Allen A. Aradi, et al.
Group Art Unit	3747
Examiner Name	Not Assigned
Attorney Docket Number	EI-7607

### U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
CDT		4,474,580		MacKenzie et al.	10/2/1984	
		4,390,345		Somorjai	6/28/1983	
		4,317,657		Niebylski	3/2/1982	
		4,268,946		Niebylski	5/12/1981	
		4,175,927		Niebylski	11/27/1979	
		4,139,349		Payne	2/13/1979	
		4,104,036		Chao et al.	8/1/1978	
		4,036,605		Hartle	7/19/1977	
		2,818,417		Brown et al.	12/31/1957	
		2,151,432		Lyons et al.	3/21/1939	
		2,086,775		Lyons et al.	7/13/1937	
		20020112466		Roos et al.	8/22/2002	
		20030177758		Roos et al.	11/25/2003	
		6,206,685		Zamansky, et al.	3/27/2001	
		6,039,772		Orr	3/21/2001	

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sub>6</sub>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

Examiner  
Signature

Date  
Considered

3/06

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to send to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC

20231.complete this form should be

Please type a plus sign (+) inside this box →



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Application Number	10/696,618
		Filing Date	October 29, 2003
		First Named Inventor	Allen A. Aradi, et al.
		Group Art Unit	3747
		Examiner Name	Not Assigned
(use as many sheets as necessary)		Attorney Docket Number	EI-7607
Sheet	4	of	5

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
COT		Faix, Louis J.; A study of the Effects of Manganese Fuel Additive on Automotive Emissions; SAE [Tech. Pap.], 780002, pp. 1-12	
		Fekete, Nicholas; Gruden, Igor; Voigtlander, Dirk; Nester, Ulrich; Krutzsch, Bernd; Willand, Jurgen; and Kuhn, Michael; Advanced Engine Control and Exhaust Gas Aftertreatment of a Leanburn SI Engine; SAE [Tech. Pap.] 972873; pp. 1-10	
		Valentine, James M.; Clean Diesel Technologies Inc. Announces Test Results of Platinum/Cerium Diesel Fuel Additive; 203/327-7050, article in Diesel/Net News; 9/20/2002, pp. 1-2.	
		Eastwood, Peter; Critical Topics in Exhaust Gas Aftertreatment; Research Studies Press Ltd. (2000), pp. 215-218	
		Lenane, D. L.; Effect of MMT on Emissions from Production Cars; SAE [Tech. Pap.], 780003, pp. 1-20	
		Lenane, D. L.; Effect of a Fuel Additive on Emission Control Systems; sae [Tech. Pap.] 902097, pp. 1-17	
		Farrauto, Robert J.; Mooney, John J.; Effects of Sulfur on Performance of Catalytic Aftertreatment Devices; SAE [Tech. Pap.] 920557, pp. 1-7	
		Jelles, S.J.; Makkee, M.; Moulijn, J.A.; Acres, G.J.K.; and Peter-Hoblyn, J.D.; Diesel Particulate Control. Application of an Activated Particulate Trap in Combination with Fuel Additives at an Ultra Low Dose Rate; SAE [Tech. Pap.], 1999-01-0113, pp. 1-6	
		Eolys™ Fuel-Borne Catalyst for Diesel Particulates Abatement: A Key Component of an Integrated System, DieselNet Technical Report, Sept. 1999, pp. 1-9.	
COT		Guyon, M.; Blejean, F.; Bert, C.; LeFaou, PH.; Impact of Sulfur on Nox Trap Catalyst Activity-Study of the Regeneration Conditions; SAE [Tech. Pap.] 982607, pp. 87-95	

Examiner Signature		Date Considered	3/06
--------------------	--	-----------------	------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/696,618
		Filing Date	October 29, 2003
		First Named Inventor	Allen A. Aradi, et al.
		Group Art Unit	3747
		Examiner Name	Not Assigned
Sheet 5 of 5	Attorney Docket Number	EI-7607	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		Arakawa, Kenji; Matsuda, Satoshi; and Kinoshita, Hiroo; Progress in Sulfur Poisoning Resistance of Lean NOx Catalysts; SAE [Tech. Pap.] 980930, pp. 111-118	
		Dearth, Mark A.; Hepburn, Jeffrey S.; Thanasiu, Eva; McKenzie, JoAnne; Home, Scott G.; Sulfur Interaction with Lean Nox Traps: Laboratory and Engine Dynamometer Studies; SAE [Tech. Pap.] 982595, 1998, pp. 1-9	
		Aradi, Allen A.; Roos, Joseph W.; Fort, Jr., Ben F.; Lee, Thomas E.; and Davidson, Robert I.; The Physical and Chemical Effect of Manganese Oxides on Automobile Catalytic Converters; SAE [Tech. Pap.] 940747, pp. 207-218	
		Bailie, J. D.; Michalski, G. W.; Unzelman, G. H.; MMT-A Versatile Antiknock; Natl. Pet. Refiners Assoc., [Tech. Pap.], AM-78-36, pp. 1-20	
		Valentine, James M.; Peter-Hoblyn, Jeremy D.; and Acres, G.K., Emissions Reduction and Improved Fuel Economy Performance from a Bimetallic Platinum/Cerium Diesel Fuel Additive at Ultra-Low Dose Rates; SAE [Tech. Pap.], 2000-01-1934, pp. 1-9	
		Guinther, Greg H.; Human, David M.; Miller, Keith T.; Roos, Joseph W.; and Schwab, Scott D.; The Role that Methylcyclopentadienyl Manganese Tricarbonyl (MMT®) Can Play in Improving Low-Temperature Performance of Diesel Particulate Traps; SAE [Tech. Pap.], 2002-01-2728, pp. 1-9	
		Nelson, A.J.; Ferreira, J.L.; Reynolds, J.G.; Schwab, S.D.; and Roos, J.W.; X-Ray Absorption Characterization of Diesel Exhaust Particulates; Article in Materials Research Society Symposium Proceedings, Vol. 590, 2000, pp. 63-69	
		KALGHATGI, G., "Combustion Chamber Deposit Flaking - Studies Using a Road Test Procedure," SAE Technical Paper 2002-01-2833, Oct. 21, 2002.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.